

AMENDMENTS TO THE CLAIMS

Kindly cancel claims **12-18, 25 and 26**, amend claims **19, 22, and 23** and add new claims **31-38** as shown in the listing of claims below. This listing of claims will replace all prior versions, and listings of claims in the application.

LISTING OF CLAIMS

- 1 Claim 1. (original) A method for alignment of one or more waveguides, comprising:
2 inserting a plug into one or more through holes in a carrier;
3 attaching one or more waveguides to the carrier;
4 aligning the carrier to align the one or more waveguides with respect to an optical device
5 attached to a substrate; and
6 tacking one or more of the plugs to the substrate to maintain the alignment of the one or
7 more waveguides with respect to the optical device.
- 1 Claim 2. (original) The method of claim 1 wherein the carrier is made from a ceramic
2 material.
- 1 Claim 3. (original) The method of claim 1 wherein the one or more waveguides are attached
2 to the carrier using an adhesive, soldering or welding.
- 1 Claim 4. (original) The method of claim 3, further comprising heat curing or UV curing an
2 adhesive used to attach the one or more waveguides to the carrier.
- 1 Claim 5. (original) The method of claim 1 wherein the waveguide includes an optically
2 transparent medium, a fiber array having one or more optical fibers, or a lens array having
3 one or more lenses.
- 1 Claim 6. (original) The method of claim 1, wherein the waveguide includes, one or more
2 active and/or passive optical elements.
- 1 Claim 7. (original) The method of claim 6, wherein the optical elements are capable of
2 attenuating, amplifying, switching, translating or routing photonic energy in one or more
3 frequencies.
- 1 Claim 8. (original) The method of claim 1, further comprising tacking one or more of the
2 plugs to the carrier.

1 Claim 9. (original) The method of claim 8 wherein the plugs are tacked to the substrate using
2 an adhesive.

1 Claim 10. (original) The method of claim 1 wherein the plug is characterized by a smaller
2 diameter than the corresponding hole such that an angle of the carrier relative to the
3 substrate may be adjusted by up to 45°.

1 Claim 11. (original) The method of claim 10 wherein the angle of the carrier relative to the
2 substrate may be adjusted by up to about 5°.

1 Claims 12-18 (cancel)

1 Claim 19. (currently amended) ~~The apparatus of claim 12~~ An apparatus for aligning one or
2 more waveguides to one or more optical devices, comprising:
3 a carrier having one or more through holes, the carrier being adapted to receive the one or
4 more waveguides; and
5 one or more plugs, each of which is sized to be received in one or more of the through
6 holes,
7 wherein the carrier is transparent to ultraviolet light.

1 Claim 20. (original) The apparatus of claim 19 wherein the carrier is made from a ceramic or
2 glass material.

1 Claim 21. (original) The apparatus of claim 20 wherein the carrier is made from fused silica or
2 Pyrex.

1 Claim 22. (currently amended) ~~The apparatus of claim 12~~ An apparatus for aligning one or
2 more waveguides to one or more optical devices, comprising:
3 a carrier having one or more through holes, the carrier being adapted to receive the one or
4 more waveguides; and
5 one or more plugs, each of which is sized to be received in one or more of the through
6 holes,
7 wherein the one or more waveguide includes waveguides include an optically transparent
8 medium, a fiber array having one or more optical fibers, or a lens array having one or
9 more lenses.

1 Claim 23. (currently amended) ~~The apparatus of claim 12~~ An apparatus for aligning one or
2 more waveguides to one or more optical devices, comprising:
3 a carrier having one or more through holes, the carrier being adapted to receive the one or
4 more waveguides; and
5 one or more plugs, each of which is sized to be received in one or more of the through
6 holes, wherein the waveguide includes one or more waveguides include, one or more
7 active and/or passive optical elements.

1 Claim 24. (original) The apparatus of claim 23 wherein the one or more active and/or passive
2 optical elements are capable of attenuating, amplifying, switching, translating or routing
3 photonic energy in one or more frequencies.

1 Claims 25-26. (cancel)

1 Claim 27. (original) An apparatus for attachment and alignment of optical devices to a
2 motherboard comprising:
3 a) at least one device carrier;
4 b) at least three adjustable plugs configured to fit into openings in the device carrier or in
5 the motherboard; and
6 c) a filler material that fills the space between the device carrier and the motherboard;
7 d) wherein the plugs closely fit into the openings, such that a clearance is large enough
8 for the plugs to slip through the openings without much insertion force and the
9 clearance is small enough that the plugs may be held in place by the force of friction.

1 Claim 28. (original) The apparatus of claim 27 wherein the clearance between the plugs and
2 the openings is 50 μ m or less.

1 Claim 29. (original) The apparatus of claim 28 wherein the carrier is transparent to ultraviolet
2 light.

1 Claim 30. (original) The apparatus of claim 29 wherein the carrier is made from a ceramic
2 material.

1 Claim 31. (new) The apparatus of claim 22, further comprising a substrate.

1 Claim 32. (new) The apparatus of claim 22 wherein the holes are sized such that the plugs
2 have sufficient clearance to slide within the holes without excessive insertion force.

1 Claim 33. (new) The apparatus of claim 22 further comprising a waveguide attached to the
2 carrier.

1 Claim 34. (new) The apparatus of claim 33 wherein the one or more plugs are inserted into
2 the one or more holes.

1 Claim 35. (new) The apparatus of claim 34 wherein one or more of the plugs are attached to
2 the carrier.

1 Claim 36. (new) The apparatus of claim 35 wherein one or more of the plugs are attached to a
2 substrate.

1 Claim 37. (new) The apparatus of claim 22 wherein the plug is characterized by a smaller
2 diameter than the corresponding hole such that an angle of the carrier relative to a
3 substrate may be adjusted by up to 45°.

1 Claim 38. (new) The apparatus of claim 25 wherein the angle of the carrier relative to a
2 substrate may be adjusted by up to about 5°.